USING VAN MANEN'S MODEL TO ASSESS LEVELS OF REFLECTIVITY AMONG PRESERVICE PHYSICAL EDUCATION TEACHERS

A Dissertation

by

KRISTY KAY BALLARD

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2006

Major Subject: Kinesiology

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Approved by:

Chair of Committee, Ron McBride
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ABSTRACT

Using Van Manen's Model to Assess Levels of Reflectivity Among Preservice Physical Education Teachers.

(August 2006)

Kristy Kay Ballard, B.S., Tarleton State University;

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The intent of this study was two-fold. The first purpose was to apply Van Manen's model to specific strategies (i.e., written assignments) and supervisory practices (i.e., interviews) to examine levels of reflectivity demonstrated and if there were any changes in the reflectivity of student teachers throughout a student teaching period. The second purpose was to assess the applicability of Van Manen's model to a preservice physical education setting. Five physical education majors enrolled in a student teaching experience volunteered to participate. Five weekly web-based written assignments were selected and analyzed using Van Manen's model of reflection. In addition, two interviews were audiotaped, transcribed, and subjected to thematic analysis techniques. Using Naturalistic Inquiry as a method of analysis suggests that utilizing supervisory approaches, written assignments, and reflective teaching can foster important changes in reflectivity levels which encourage reflective thinking in physical education student teachers. Increased levels of sophistication among the participants as the semester progressed were noted and may be attributed to a developmental effect similar to Fuller's Concerns Theory. The results also support Pultorak's (1993) assertion that students can

increase reflective thinking when fostered and encouraged in preservice programs. This study combines available resources (i.e., technology, supervisors) with Van Manen's model to assess reflectivity levels in a physical education setting. Findings indicate that Van Manen's model can be used objectively in a physical education setting and can be utilized in applying a quantitative measure to qualitative responses.

DEDICATION

To my children, Braden and Brynn,
Anything can be achieved if you put your mind to it ~
NEVER GIVE UP!

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to Dr. Ron McBride for serving as chair of my committee during my time at Texas A&M University. Dr. McBride provided much attention, knowledge, and experience throughout this journey. I would also like to thank the members of my committee: Dr. Carl Gabbard, Dr. Bob Armstrong, and Dr. Stephanie Knight for all of their help and encouragement. Thank you as well to Dr. Pat Goodson who provided much needed encouragement, advice and guidance.

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Last, but definitely not least, my mom, Vivian, and dad, Allen, for their endless love and support; without them I would have never made it this far.

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CHAPTER I

INTRODUCTION

This study was used Van Manen's model to examine reflectivity levels demonstrated by preservice physical educators during their student teaching semester. Second, this study examined changes in these levels as the semester progressed. This chapter reviews the literature on reflectivity and includes: (a) definitions of reflectivity, (b) models of reflectivity, (c) research in general education areas, and (d) research in physical education.

Background

Definitions of Reflectivity

Knowing what to do and when to do it is an important characteristic of effective teaching. Because of this, the preparation of reflective teachers has moved to the forefront of teacher education (Calderhead, 1989; Hoban, 2000; Ross, 1989; Stahlhut & Hawkes, 1997). As a result, teacher reflectivity has become an area of growing interest, import, and concern in the educational literature. According to Dewey (1933), reflectivity is not an inherent characteristic. Rather, it must be developed. Pultorak (1993) states that the preparation of reflective teachers is paramount to teacher education. Education programs need to "prepare teachers who are autonomous models of intellectual independence for their students…teachers who are able to reflect about their own behavior and surroundings in order to make valid decisions" (p. 288). While the preparation of general preservice teachers to become reflective teachers has been studied,

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This thesis follows the style of *The Journal of Physical Education, Recreation & Dance.*

there has been little research on the preparation of preservice physical educators. Therefore the purpose of this study was to examine preservice physical education majors to determine their levels of reflectivity and if any changes in those levels occurred throughout a student teaching semester.

Dewey (1933) introduced the concept of "reflective thought" and defined it as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends" (p. 9). More recently, reflective thinking has been defined as the process by which a teacher examines his or her situation, behavior, practices, effectiveness and accomplishments (Valverde, 1982). According to Reiman (1999), reflective teaching practitioners demonstrate the ability to analyze the process of what they are doing, while at the same time make judgments to modify their practice so that it best matches the needs of students. These behaviors follow closely to what Schön (1983) introduced as reflection-in-action and reflection-on-action. Reflection-in-action refers to the process of interpreting, analyzing, and providing solutions to problems during an action (while the situation is actually taking place. Reflection-on-action refers after the situation has occurred. The person now mentally reconstructs the situation to analyze actions and events.

Wojcik (1993) adds that reflective teaching considers what the teacher thinks and feels about teaching to be a key component to teacher improvement and that reflective learners not only engage in problem-solving and decision-making, but also reflect on the thinking in progress. They are able to think about their strategies and revise them in

order to make them more effective. If new ideas are a result of reflective thinking, then one may conclude that reflective thinking is key to changing and improving teaching.

There are three prerequisite attitudes that must be present for a person to become reflective: open-mindedness, whole-heartedness, and responsibility (Dewey, 1933). Open-mindedness is defined as the ability to consider new problems and ideas free from prejudice and an "active desire to listen to more sides than one…to recognize the possibility of error even in the beliefs that are dearest to us" (Dewey, 1933, p. 30). According to Goodman (1991), Dewey's whole-heartedness refers to one's internal strength and their desire to be a reflective educator regardless of any personal cost. The final prerequisite, responsibility, is considered a moral trait rather than intellectual. According to Dewey (1933), "to be intellectually responsible is to consider the consequences of a projected step… [and to] be willing to adopt these consequences when they follow reasonably from any position already taken." (p. 32). Responsible teachers question why they are doing what they are doing and always consider the educational, psychological, and larger social context and implications of classroom life. They hold themselves responsible not only for their students' education, but also implications for society as a whole. Goodman (1991) adds that intellectually responsible teachers consider consequences and implications of their actions in both the short- and long-term.

Bullough (1989) argues that while reflectivity is a worthy aim of teacher preparation programs, the task is to define what reflectivity is. He proposes that four questions must be answered before any program can attempt to meet the needs of their students: What is meant by reflectivity? What are program participants to be reflective about? What are the purposes of reflectivity? What curriculum is most likely to enhance

reflectivity? By answering each of these questions, programs may be developed that give students the prerequisite knowledge and experience to approach and evaluate problems and to solve them in a reflective manner.

Rodgers (2002) attempted to take Dewey's 1933 definition of reflectivity and put it into terms that could be more readily utilized today. She cited that numerous organizations, such as the National Board for Professional Teaching Standards (NBPTS); the National Commission on Teaching and America's Future (NCTAF); the National Foundation for the Improvement of Education (NFIE); and the National Staff Development Council (NSDC) have all identified reflection as a goal for teachers and students to attain. Her argument is there is no clear definition of reflection and therefore, she undertakes the mission of providing a clear picture of Dewey's original ideas so that "they might serve as we improvise, revise, and create new ways of deriving meaning from experience – thinking to learn." (p. 844). Rodgers states that reflection includes four criteria: a meaning-making process that makes continuity of learning possible; a systematic, disciplined, rigorous way of thinking; needs to happen in community, in interaction with others; and requires the personal and intellectual growth of oneself and others.

It is important to note that Zeichner and Tabachnick (1991) outlined four major theoretical traditions in the reflective teaching literature. Each of these is concerned with thoughts and practices connected to particular educational aims and values. It is important to add that the traditions are not mutually exclusive and may overlap in many ways. The traditions are the academic, social efficiency, developmentalist, and social reconstructionist tradition. The academic tradition emphasizes the teacher's role as a

subject matter specialist. They are scholars who address reflection on subject matter and its transformation to students. The social efficiency tradition emphasizes the intelligent use of "generic" teaching skills and strategies that have been derived from the scientific study of teaching.

The developmentalist tradition emphasizes the learner's natural development as the basis for what and how something should be taught. The last tradition, social reconstructionist, views schools and teachers as agencies of change for the creation of a more just and humane society. This tradition has three central characteristics: reflection focuses on the social conditions in which teaching practices are situated; reflective teaching is democratic and focuses on inequality and injustice issues within the school and society; and reflective teaching is committed to reflection as a communal activity.

According to Van Manen (1977), teachers must be able to apply a variety of techniques to the curriculum and to the teaching-learning process so that a predetermined set of objectives can be brought to fruition efficiently and effectively. He adds that teachers should also be concerned with making educational experiences and actions visible to other teachers, learners, and the other participants of the curriculum process. In order to achieve this goal and to make practical decisions, educators must be aware of alternative theories and/or the underlying assumptions, principles, and premises of knowledge.

Serafini (2002) defines a reflective teacher as one who consciously, systematically, and deliberately frames and reframes practices in the "light of consequences of our actions, democratic principles, and the beliefs, values, expectation, and experiences that we as teachers bring to the teaching-learning event" (p. 4). He adds

that reflective practice is a willingness to question one's own teaching. Serafini further states that there are four aspects to consider when promoting reflective practice – time, distance, dialogue, and a preferred vision.

Time is crucial. It is difficult for many teachers to put aside the necessary amount of time so that they might "mull over" what has happened and what should be happening. Distance refers to the ability to "objectively" analyze one's own teaching and postpone judgments until information is collected. He found that it is difficult to analyze experiences while they are happening and recommends the use of a reflective notebook to record observations for later analysis. Dialogue is crucial because the use of colleagues as support cannot be underestimated. Reflectivity is a social process, we make decisions in a social context based on our social interactions. The final aspect is a preferred vision which is the ability to articulate what teachers wish their classrooms to be like. It is a dynamic concept that changes as one's knowledge base and classroom experiences expand.

Arredondo and Rucinski (1998) state that "evidence shows that teachers' beliefs about learners, curriculum, and numerous other factors directly influence or mediate classroom practice" and that "the levels of cognitive development of a variety of professionals are correlated with certain behaviors" (p. 300). Zeichner and Liston (1987) add that learning for pupils and teachers is greater and deeper when teachers are encouraged to utilize their own judgment about the contents and processes of their work and to give some direction to the shape of schools as educational environments. One way to achieve this belief is by fostering and encouraging reflective thinking.

Models of Reflectivity

According to Arredondo and Rucinski (1998), humans behave according to the level of the complexity of their mental structures and that these structures are organized into a sequence of stages from less to more complex. Van Manen (1977), in his theoretical model, defined three stages or levels of reflectivity. Level one, technical rationality (TR), consists of responses that deal with the technical application of educational knowledge and basic curriculum principles, such as are the students doing what the teacher asked them to do. At this level, the contexts of the classroom, school, community, and/or society are not taken into consideration. At the second level, practical action (PA), the teacher becomes more concerned with clarifying assumptions and predispositions while assessing the educational consequences toward which a teaching action leads. S/he analyzes student and teacher behaviors to see if and how goals are met. The third level is critical reflection (CR). At this level, educators are concerned with worth of knowledge and the social circumstances useful to students without personal bias. S/he asks her/himself several questions such as what were the strengths of the lesson, what should be changed, and was the content covered important to the students?

Zeichner and Liston (1987) also identified four levels of reflective thought in their model. The first level is factual, where the teacher focuses on facts associated with procedural steps. The teacher is concerned with what has occurred in a teaching situation or what may occur in the future. The second is prudential, where the teacher focuses on the evaluation of teaching experiences and outcomes. The teacher examines what they might need to do or evaluates what has been accomplished. Justifactory, the third level, occurs when the teacher provides rationales for actions. The teacher asks the questions of

why they did what they did, why they did it in that manner, and why they chose that action with those particular students. The final level, critical, occurs when the teacher focuses on the underlying assumptions of actions that may or may not have an impact on social justice. At this level, the teacher examines the goals, curriculum and materials, procedures, students, and context.

King and Kitchener (1994) proposed that reflective thinking developed in seven stages, each stage provided the foundation for the next. The first three stages encompass pre-reflective thinking. In these stages, knowledge is certain and it is the only perceived truth or reality. Knowledge is absolute and concrete. Individuals in these stages have a belief system that recognizes a few "expert" as having the one true knowledge. Anyone who does not subscribe to this knowledge domain is incorrect. Their answers or solutions do not display any form of reasoning. Stages four and five display more uncertainty and are referred to as quasi-reflective thinking. Questions about what is the real truth begin to become apparent. Individuals in these stages recognize that some problems or situations are ill-structured and that prior knowledge may not prove adequate in solving the problem. Individuals may demonstrate difficulty in providing sound rationales to support their statements. The last two stages indicate true reflection. Individuals realize that knowledge is not absolute and its value must be taken within the context that it is presented. Decisions are made based on sound rationale and may be re-evaluated on a constant basis. The individual is both flexible to novel situations and to change.

Research in Education

Reflection emerges as a suggested way of helping practitioners and preservice teachers better understand what they know and do as they develop their knowledge of practice through reconsidering what they learn in practice (Loughran, 2002). Schön (1983) stated that the ability to frame and reframe problems is one of the most important aspects of developing reflective practice as it influences subsequent actions in practice. Reflection becomes effective when it leads a teacher to make meaning from a situation in ways that enhance understanding from a variety of viewpoints (Loughran, 2002).

Pultorak (1993) used Van Manen's levels to determine different categories of reflection. He then incorporated four different procedures (bi-daily journals, bi-weekly journals, visitation journals, and reflective interviews) into the student teaching experience to see when, and if, reflectivity occurred. He found that each procedure provided all three levels of Van Manen's reflectivity. However, the nature of the assignment seemed to determine the level of reflectivity. As the procedures developed in complexity, so did the responses. He advocates that teacher educators consider the desired level of reflectivity when designing classroom activities so that the end result should be reflective teachers who can serve as role models for their students.

Tsangaridou and Siedentop (1995) agree and advocate reflection not only because of the complex decisions that teachers make everyday, but also because of an increasing concern about the moral and political dimensions of teaching. Tsangaridou (2005) further states that the value of reflection in teaching will continue to be of interest because it is necessary that future teachers be prepared for the "challenges and realities of classrooms" (p. 24). Francis, Tyson, and Wilder (1999) add that the professional

maturation process of the teacher should result in the highest level of reflection that incorporates the consideration of moral, ethical, and political issues. There is a general agreement that while teacher education programs cannot prepare teachers for every situation they may encounter, the programs may help them to become thoughtful decision makers (Tsangaridou & Siedentop, 1995).

Even though reflective thinking is a desired outcome of the educational process, it is not always attained. Risko, Vukelich, & Roskos (2002) state that more direction is needed to move prospective teachers beyond their own egocentric views to become reflective teachers. They profess that while many programs assign specific activities for "doing" reflection, they do not describe which instructional strategies might support reflection. Pultorak (1993) found that student teacher's lack of time, omission of structural opportunities to reflect, and the demanding workloads of university supervisors affected teacher reflection. However, activities recommended by Pultorak designed to structure or increase reflective thinking by student teachers appear successful in increasing the amount of time for students to formally record their reflections. Student teachers can also increase their reflective thinking strategies when placed in programs designed to foster reflective outcomes (Pultorak, 1993). Arredondo and Rucinski (1998) added that interventions enhancing the development of teachers' cognitive structures ultimately lead to more desirable teaching behaviors. Griffin (1997) added that while reflection may not be something that student teachers would develop on their own, a more supportive program with structured activities might help promote reflection.

There are a variety of specific reflective strategies that can help develop the reflective capabilities of student teachers. Many researchers have focused on a variety of

writing mediums, such as journals, to enhance reflectivity. Wedman & Martin (1986) reported that "writing engages student teachers in making knowledge explicit" (p. 69). They espouse that writing is a way to ponder the relationships between oneself and their role in the institution they serve, between theory and practice, and between their teaching effectiveness and their daily routines. The authors found that one way to encourage and refine reflectivity is to pose journal questions that encourage thinking at all three of Van Manen's levels. They promote the use of journals as a way to develop and practice skills so that student teachers may "overcome some of the negative effects currently associated with field experiences by questioning and examining routinized instructional practices and institutional procedures." (p. 71).

Hoover (1994) found that writing was a way for student teachers to deliberate and to explore the commonalities between what they learned in theory and what they did on a daily basis. She noted that when student teachers were given a predetermined focus, the participants demonstrated more reflectivity. When given assignments without a focus, the participants tended to supply responses that were filled with complaints about their teaching experience, their mentor teachers, and the reality of the school setting. Hoover determined that in order for an educational program to be effective, students must be encouraged to move beyond the personal to deliberations about educational principles and practice, the consequences of teaching behaviors, and the relationship of schools and society.

With the advances of technology, Hoban (2000) integrated the World Wide Web into a university class. His study used templates to encourage preservice teachers to examine how they learned in a university setting by following a three phase reflective

framework. In the first phase, analysis, the participant examines the personal, social, and situational factors which influenced his/her learning. In the second, synthesis, the participant collates the factors determined in phase one. They would then use a constant comparative analysis process to identify key factors for each of the categories, which were summarized in a table called a "learning profile." The final phase, theorizing, occurred as the participants took the information from the synthesis phase and theorized about the relationships between them. Hoban found that this strategy could provide valuable insight for the participants. They could use the information to design an optimal learning environment which takes the type of teaching, type of learning, and type of peer interaction into consideration. This awareness could be a useful skill for their future role as an educator.

Tsangaridou and Siedentop (1995) classified reflective strategies into six general categories: writings, curriculum inquiry, supervisory approaches, action research, ethnography, and reflective teaching. Writings consist of journals, logs, or portfolios designed to assist future teachers in focusing their attention on specific aspects of teaching and schooling. Curriculum inquiry is utilized after preservice teachers have received theoretical knowledge about curriculum and then learn how to analyze curriculum materials and develop their own classroom curriculum.

Developing the reflective abilities of preservice teachers appears to be an important element guiding supervisory practices. These supervisory actions stress the role of supervisors stimulating student teachers to analyze and critique their teaching performance and classroom events while also helping them to reflect on and about the theory and practice of teaching. Action research engages the student teacher in the cycles

of planning, action, observation, and reflection of the student teaching experience. Ethnographic methods encourage student teachers to visit different schools and study different aspects of teaching and schooling in a critical manner. Finally, reflective teaching strategies encourage student teachers to develop their reflective abilities.

Kraus and Butler (2000) examined one program that was created and designed in the Glenville State College's Teacher Education Program. This program exposes preservice teachers to reflective thought and the use of reflective evaluation. It is composed of three specific developmental stages: Foundation Stage, Process Development Stage, and Reflective Practice Stage. During the first stage, students are introduced to and involved in activities such as dialogue journals, developing a philosophy of education, and "thinking outside the box." In the second stage, students are involved in developing lesson plans for particular content areas. After presentations to fellow classmates, feedback is provided for reflective consideration. Preservice teachers must defend their position. In addition, reflective journal entries are required where specific educational issues must be addressed. In the final stage, the students are required to analyze and apply various curriculum plans and designs and to implement various instructional methods. Reflective interviews, journals, and self-assessment are all implemented in this phase. While Kraus and Butler found that preservice teachers in this program were provided multiple opportunities to develop reflective thinking skills, they failed to provide any documentation to show whether this program increased reflectivity or not.

Research in Physical Education

While much research on reflective thinking is evident in the classroom, there is little research on reflective thinking in physical education. Placek and Smyth (1995) found that preservice teachers had relatively low levels of reflectivity that did not appear to increase very much over their student teaching semester. However, other researchers found that various methods could enhance reflectivity (Tsangaridou & O'Sullivan, 1994; Byra, 1996; McCollum, 2002). Tsangaridou and O'Sullivan (1994) found that reflective assignments could increase the reflective abilities of student teachers. The authors found that by including specific and challenging questions in materials such as logs, video commentaries and school observations, preservice teachers could become more analytical and reflective. They also recommended that all three areas of reflection – technical, practical, and critical - be considered and not placed in a hierarchical order. Tsangaridou and O'Sullivan concluded that reflection can be learned and that knowledge can lead to professional growth and development.

After reviewing the literature of reflective teaching, Tsangaridou and O'Sullivan (1994) developed the Reflective Framework for Teaching in Physical Education (RFTPE). The RFTPE was developed as an attempt to describe both the focus and the level of reflection demonstrated by preservice physical educators. The reflective process was divided into three categories: technical, situational, and sensitizing. Technical consists of the managerial or instructional aspects of teaching. Situational deals with the contextual issues of teaching and sensitizing represents reflection upon the social, moral, ethical, or political aspects of teaching.

The model also includes three levels of reflection: descriptive, justification, and critique. Descriptive provides descriptive information of an action about some aspect or aspects of teaching. Justification gives rationale or logic of an action related to teaching. Critique gives an explanation and evaluation of various teaching actions. The RFTPE can be utilized to examine different methodologies such as logs and video commentaries to enhance teacher reflection. It may also be used to more equally distribute the focus areas of student teaching from primarily technical to include situational and sensitizing as well. Students taught to view and interpret teaching from a variety of perspectives may be encouraged to increase their initial levels of reflectivity.

McCollum (2002) found that the Reflective Framework for Teaching in Physical Education (Tsangaridou & O'Sullivan, 1994) enhanced preservice teachers' reflective thinking. McCollum found three main reasons why the use of the RFTPE could help facilitate preservice teacher's reflection. The first is that the RFTPE provides a specific format for guiding reflective writing by clarifying what is significant to the preservice teacher. Second, the RFTPE can be utilized in a variety of mediums such as peer observations, videotape analysis, and analysis of post-lesson conferences. Lastly, by using the RFTPE in early field experiences as well as in student teaching faculty can monitor progress or changes in the nature of the preservice teacher's reflectivity.

Byra (1996) found that supervisors who utilized reflective strategies could enhance the levels of reflectivity found in student teachers. Supervisors who valued all three areas of reflection – technical, practical, and critical – appeared to provide more opportunities for their student teachers to reflect. Byra suggests that supervisors use a multitude of mediums, such as peer teaching, researching curriculum-related issues,

comparing and contrasting teaching styles, and discussing performance after teaching a lesson or observing a peer teach. By doing so, preservice teachers are forced to develop questions and answers about their teaching, others' teaching, and school issues which may be positive steps in becoming more reflective. If they do not receive experiences that require them to reflect on the act of teaching, Byra concludes that they are not likely to make changes once they become in-service teachers.

Wittenburg and McBride (2001) recently developed the Dispositions of Reflective Thinking Questionnaire (DRTQ) based upon interviews from preservice teachers and the reflective thinking literature. Their instrument represents a first attempt to quantify the reflective and metacognitive dispositions in preservice teachers. While the DRTQ represents a quantitative approach to assessing teacher reflectivity, other researchers have adopted more qualitative methodologies.

Placek and Smyth (1995) for example, evaluated learning activities planned to facilitate and increase the reflectivity of undergraduate physical education majors. Four essays were written during the course of the semester. The essays were subjected to qualitative analysis by dividing each assignment into segments (a segment was defined as writing which focused on one central idea), coded, added, and a mean score for each assignment calculated. The categories fell into one of seven levels. Levels 1 through 3 described events with no explanation offered. Levels 4 through 6 offered explanations of those events. Level 7 offered explanations with a demonstration of consideration of ethical, moral, and political issues. Placek and Smyth found that the students demonstrated moderately low levels of reflectivity that increased very little over the course of the semester.

Physical education research on preservice teacher reflectivity is not just limited to the United States. Australians Kirk and Tinning (1992) suggested the use of action research and journals to promote praxis (the inseparability of theory and practice) and reflectivity in preservice and in-service teachers. The use of journals would move teachers toward praxis by helping them make sense of their work though critical appraisal of relevant literature within the context of their own experiences.

According to Risko, Vukelich, & Roskos (2002), engaging in professional dialogue and coaching may help preservice teachers work through the analysis of their own teaching behaviors. Incorporating key recommendations of Tsangaridou such as writing, supervisory approaches, and reflective teaching into the student teaching experience may have merit and may result in the development of enhanced reflective thinking among physical education student teachers. Having the students complete weekly written assignments about their teaching and supervisors conducting follow up sessions where students are questioned about their performance for example, may result in devoting more time to thinking about their teaching. Having student teachers demonstrate proficiency at Van Manen's third level of reflectivity would appear to be a worthy goal of teacher preparation.

In summary, this chapter reviewed the current definitions of reflectivity, reflectivity models, teacher reflectivity research in education, and initial research in physical education. The results from the literature review reveal that while the use of journals, small group sessions, teacher interventions, internet assignments, and teacher preparation programs have been employed in regular education settings, research that infuses reflectivity in the physical education setting is in its infancy. While studies in the

physical education area have utilized reflective assignments such as logs, video commentaries, and reflective sessions to help teachers increase reflectivity levels, few studies combine more than one strategy to address reflectivity. Therefore, the combination of weekly web assignments and supervisory practices such as debriefing interviews may have applicability to and enhance reflectivity among preservice physical education students.

Limitations

The present study involved the following limitations:

1. Due to the small sample size, results will not be generalized to other student teacher populations.

Delimitations

The study was delimited to:

1. Health and Kinesiology preservice physical education student teachers from Texas A&M University
2. All participants currently completing their student teaching requirements.

CHAPTER II

THE STUDY

Knowing what to do and how do it has become an integral part of teaching. Because of this, reflectivity has become a major focus in teacher education programs. According to Lee (2005), teacher education programs should develop teachers' reasoning about why they use certain strategies and how improvements can have a positive effect on students. Therefore, Lee recommended that preservice teachers engage in reflective activities to learn new ideas about their teaching. Richardson and Placier (2001) state that a challenge facing researchers is to develop ways of determining whether or not preservice teachers are reflective and ways to assess whether or not changes in reflectivity occur as the result of any intervention. Davis (2006) adds that simply providing opportunities to reflect is insufficient because the reflection promoted may not be productive. Teacher educators must "determine the extent to which tasks promote productive reflection." (p. 281).

To the best of our knowledge, little information exists that specifically addresses where or when changes in reflectivity might occur. Therefore the purpose of this study was to examine a sample of physical education student's reflectivity during their 12-week student teaching experience. Written assignments, supervisory practice, and reflective teaching via debriefing sessions were utilized to determine what indicators of reflectivity might be present and if changes might be observed throughout a student teaching semester.

Dewey (1933) defined reflectivity as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends" (p. 9). Later, Valverde (1982) defined reflectivity as a process by which a teacher examines his or her situation, behaviors, practices, and effectiveness, while Reiman (1999) proposed that reflective practitioners are able to analyze what they are doing as they are doing it and make modifications to meet the needs of their students. Similarly, Wojcik (1993) stated that reflective practitioners are able to think about their strategies and revise them in order to make them more effective.

Several prominent models of reflectivity have been proposed that include Zeichner and Liston (1987), King and Kitchener (1994) and Van Manen (1977). Zeichner and Liston's model contains four reflectivity components: factual, prudential, justifactory, and critical. King and Kitchener generated a seven-stage model for reflectivity in which the seven stages are typically condensed into three: pre-reflective, quasi-reflective, and true reflection.

Van Manen (1977), one of the pioneers of reflectivity, stated that teachers should be concerned both with making educational actions visible to others, and with their ability to apply a variety of techniques to effectively reach predetermined objectives. In order for this to be achieved, teachers must be able to demonstrate reflectivity, i.e., explain their teaching actions. In Van Manen's model, each level of reflectivity is sequential; one must address the needs of each level before proceeding to the next. The first level, technical rationality (TR), consists of responses that deal with the technical application of educational knowledge and basic curriculum principles such as, "Are the

students doing what the teacher asked?" Contexts of the classroom, school, community, and/or society are not considered.

Once the participant recognizes the restraints of this level, the need for a higher level of deliberation becomes apparent. The participant evolves to the second level, practical action (PA). Thinking at this level occurs when the teacher becomes more concerned with clarifying assumptions and predispositions while assessing the educational consequences. Here, it is assumed that "every educational choice is based on a value commitment to some interpretive framework by those involved in the curriculum process" (p. 226). During this level, one analyzes both teacher and student behaviors to see if and how goals are met. However, if one desires to deliberate the worth of the educational goals and experiences, still a higher level of rationality must be attained.

At level three, critical reflection (CR), educators are concerned with the worth of knowledge and social circumstances useful to students apart from the educator's personal bias. The teacher uses continually critiques the influence of institutions and any repressed forms of authority. According to Van Manen a goal of this level is to have a "Universal consensus, free from delusions or distortions…that pursues worthwhile educational ends in self-determination, community, and on the basis of justice, equality, and freedom" (Van Manen, 1997, p. 227). One who attains this level asks him/herself questions such as, "What were the strengths of the lesson, what should be changed, and was the content important to the students?"

Van Manen's model was chosen for this study because of its prominence in the reflective teaching literature. Birmingham (2004) notes that Van Manen's work "remains a solid and salient foundation for more current research" (p. 313). Literature reviews on

reflective teaching by Tauer and Tate (1998), Tsangaridou and Siedentop (1995), Hatton and Smith (1995), and more recently, Birmingham (2004) all cite Van Manen's influence when discussing reflectivity.

In the general education setting, Schweiker-Marra, Holmes, and Pula (2003) and Risko, Vukelich, and Roskos (2002) cite Van Manen as one of the premier sources for reflectivity. Pultorak (1993) used Van Manen's levels of reflectivity to develop a framework to determine different categories of reflection while Wedman and Martin (1986) used Van Manen's levels to analyze journal statements. Both Pultorak (1993) and Wedman and Martin (1986) examined student teachers in traditional classroom settings. In the field of physical education, Tsangaridou and O'Sullivan (1994) used Van Manen's work to help develop their Reflective Framework for Teaching in Physical Education while Placek and Smyth (1995) referred to Van Manen's framework to help "design, implement, and evaluate learning activities planned to facilitate and increase reflectivity" (p. 107).

Most research on reflectivity has occurred in the traditional classroom setting. Pultorak (1993) used Van Manen's model to incorporate bi-daily journals, bi-weekly journals, visitation journals, and reflective interviews into student teaching to see when and if reflectivity occurred. Tsangaridou and Seidentop (1995) used six categories such as writings, curriculum inquiry, supervisory approaches, action research, ethnography, and reflective teaching to help prepare teachers to become thoughtful decision makers. Wedman and Martin (1986) reported that writing is one way to ponder relationships between oneself and the roles one plays, between theory and practice, and between teaching effectiveness and daily routines. They proposed that questions to encourage

thinking at all three of Van Manen's levels be used. Hoover (1994) used writing as a way for students to deliberate and explore commonalities. When given a predetermined focus, students demonstrated more reflectivity.

While most research to date on teacher reflectivity has occurred in the traditional classroom setting, little information is available for other settings. Tsangaridou and O'Sullivan (1994), for example, found that reflective assignments could increase the reflective abilities of physical education student teachers. Unlike Van Manen, they considered all three levels and did not place them in a hierarchical order. Rather, the level of reflectivity depended on the context and situation. They developed the Reflective Framework for Teaching in Physical Education (RFTPE) in an attempt to describe both the focus and reflectivity level demonstrated. They found that the RFTPE could be used to examine different methodologies both to enhance reflection and to more equally distribute focus to all three levels. McCollum (2002) provided support for the RFTPE in three ways. First, it provides a specific format for guiding reflective writing by clarifying what is significant to the preservice teacher. Second, it can be utilized in a multitude of mediums such as peer observations and videotape analysis. Third, by using the RFTPE in early field experiences, student teachers can monitor progress or changes in reflectivity.

In another study, Byra (1996) found that supervisors who valued all three of Van Manen's levels appeared to provide more opportunities for student teachers to reflect. By using reflective strategies such as journals and debriefing, preservice teachers may be forced to develop questions and answers about their teaching which may be a positive step in becoming a more reflective practitioner. Finally, Wittenburg and McBride (2001)

developed the Dispositions of Reflective Thinking Questionnaire (DRTQ) as one of the first attempts to quantify the reflective and metacognitive dispositions in student teachers.

This study builds on previous research in several ways. First it begins to sensitize preservice teachers to the process of reflectivity in the actual school setting. Second, few studies have incorporated different means of analysis for qualitative data; this study uses thematic analysis and Van Manen's model. Third, this study expands upon earlier research by examining strategies such as written assignments and supervisory practices such as interviews that promote reflectivity used in other educational areas. Finally, while there is no specific information on when changes in reflectivity might be expected to occur, this study attempts to asses changes in reflectivity over a 12-week student teaching period. Specifically, the purposes of this study were twofold. The first was to apply Van Manen's model to specific strategies such as written assignments and interviews to examine levels of reflectivity demonstrated and if there were any changes in the reflectivity of student teachers throughout a student teaching period. A second purpose was to assess the applicability of Van Manen's model to a preservice physical education setting.

Methods

A Naturalistic Inquiry approach (Lincoln and Guba, 1985) was employed since this study examined levels of reflectivity demonstrated by the participants. While quantitative methods may provide a broader and more generalizable set of findings, the qualitative methods used here may provide us with more depth of information (i.e., 'thick descriptions') that might increase our understanding of the phenomenon studied (Patton, 2002). Erlandson, Harris, Skipper, and Allen (1993) further support naturalistic inquiry

as a means to examine changes over time by taking into account the dynamics and complexities which may be valuable in determining transferability and dependability of findings.

Participants

The study took place in the spring semester of 2003. Participants were physical education majors enrolled in a teacher training program at a Research Extensive University located in the Southwestern United States. Eighteen students were enrolled in a student teaching experience during the time of the study. Of these, 12 were assigned to the primary investigator for supervision. These students were eliminated from the sample to avoid potential conflict of interest and feelings of coercion. Of the remaining six, five (four females, one male) volunteered to take part in the study. All were graduating senior physical education majors whose ages ranged from 22 to 25 and their cumulative Grade Point Averages ranged from 2.669 to 3.568. For all participants, the student teaching course was the culminating experience in their teacher training program. All participants completed a consent form and the study was approved by the university's Institutional Review Board.

Procedures

As part of the student teaching experience, supervisors schedule three site visits to observe the student teach and to ensure program expectations were met. The interviews were conducted during two of the visits. The first took place by the third week of the experience when the student teachers had just begun teaching lessons. The second interview took place within the last two weeks of the student teaching experience before the cooperating teacher resumed control of their classes. A structured interview protocol

(Fontana and Frey, 2000) was employed where all participants were asked the identical five questions about their physical education lessons.

Pultorak (1993) developed nine reflective questions to help teachers attain Van Manen's third level of reflectivity. These questions served as a framework for our interviews. Appendix A lists all of Pultorak's questions. Due to time constraints and potential perceived overlap of question focus, this study selected five of Pultorak's questions. (See Table 1) Each interview lasted approximately 20 minutes and was audiotaped. The tapes were given to the primary investigator for transcription and analysis.

Table 1. Interview Questions

1. Do you think the lesson was successful? Why/Why not?
2. What, if anything, would you change about the lesson?
3. What were the essential strengths of the lesson?
4. Can you think of another way you might have taught the lesson?
5. Do you think the content covered was important to the students? Why/Why not?

Note. Question numbers and order were changed from Pultorak's original list

Analysis

Thematic analysis of the transcribed interviews was conducted (Lincoln and Guba, 1985). Units of meaning were typed onto index cards and placed in a pile. The first card was read and placed in a yet-to-be-named category. Then the second card was read. If deemed similar to the first card, it was placed with the first. If not, it was placed

in a second yet-to-be-named category. This process was repeated with the remaining cards. When finished, each category (or pile of similar-content cards) was examined for any over lap with any of the other categories and for any possible connections. Each question was subjected to its own analysis.

Written assignments

A student teacher website was used in order to maintain contact, provide resources, and to deliver assignments to the physical education student teachers. Beginning the second week of the semester, the preservice teachers visited the website to complete ten weekly assignments. Five of these (weeks 3, 4, 5, 6, and 9) were selected and forwarded to the primary investigator for analysis (See Table 2). These assignments were selected due to the potential for detailed and descriptive responses at each of Van Manen's levels. For example, the first assignment focused on a discipline situation which would probably provoke a technical rationality (Level one) response where as the third assignment asked if the material presented was relevant to students (level three, critical reflection). Data collection began on week five.

Table 2. Written Assignments

1. Describe one discipline situation that occurred during a lesson you were teaching or when you were in charge (lunch duty, bus duty, etc.). What was your initial reaction? How did you resolve the situation? Was there some measure of classroom management that you could have used that might have avoided the situation? Place yourself in the shoes of the student for a moment. What may have caused the student to react the way he/she did?
2. Describe your thought-processing strategies you went through in developing the upcoming week's lesson plans in your teaching field(s). When did you plan the lessons? Where were you when you

Table 2 Continued

wrote out the lesson plans? How much time was spent preparing the lessons? Why did you choose the particular activities that you put into the weekly lesson plans?

3. Reflect back on the unit and lessons that you have been teaching. Ask yourself if the material you are presenting is relevant to the students. Do they understand the importance of "why" they need to know the material? Can they take the content material and use it in either other content areas or in their daily lives? Explain how you are accomplishing this or how you intend to accomplish this in the near future.
4. You should have had ample opportunities to utilize some of the skills of teaching. Refer back to several lessons from this past week. Which skills were used on a consistent basis in the lessons? Think back on the feedback that you provided the students. Was the feedback direct or indirect (questioning strategies)? Were the students challenged to think at levels greater than basic rote memory? What are some strategies you can use to accomplish the task of moving the students in your classes to think at higher levels?
5. Over the past semester you have probably noticed a big change within yourself as a teacher. Discuss the areas in your teaching where you have made the most progress or have seen the biggest change. Which areas do you think still need more improvement? What was the most unexpected challenge you faced during your student teaching? What are some new ideas that you learned from your cooperating teacher(s) or other teachers at your school?

Establishing Interrater Reliability

Analysis using Van Manen's levels of reflectivity was conducted for both the interview questions as well as the written assignments. That is, prior to data analysis, the primary investigator met with two individuals not associated with the present study but trained in qualitative analysis techniques. In the first session, anonymous assignments

completed by student teachers not associated with the study were read to establish criteria for each of Van Manen's levels of reflectivity. This was accomplished by reading an assignment and then reaching a consensus of which reflectivity level was demonstrated (See Table 3). An agreement of 90% was reached. In the second session, identical assignments were read and assigned to one of Van Manen's three reflectivity levels. A 93% agreement was reached. Agreement was calculated by dividing the number of agreements by the number of agreements plus the number of disagreements and multiplying by 100.

Table 3. Van Manen's Levels of Reflectivity

Level	Definition
Technical Rationality (TR)	Teacher is concerned with technical application of knowledge and basic curriculum principles (i.e., are the students on-task?)
Practical Action (PA) -	Teacher becomes more concerned with clarifying assumptions while addressing educational consequences (i.e., if and how are goals being met)
Critical Reflection (CR)	Teacher is concerned with worth of knowledge without a personal bias (i.e., was content important to students?)

Trustworthiness

According to Erlandson, Harris, Skipper, and Allen (1993), if intellectual inquiry is to add to an overall body of knowledge or solve a particular problem, it must demonstrate some measure of credibility. For this to occur, the inquiry must "demonstrate its truth value, provide the basis for applying it, and allow for external judgments to be made about the consistency of its procedures and the neutrality of its findings of decisions" (p. 29). Guba and Lincoln refer to these qualities as "trustworthiness" (Lincoln and Guba, 1985).

Trustworthiness of this study was established through credibility, transferability, dependability, and confirmability. Credibility arose through peer debriefings and member checks. Peer debriefings occurred when the lead investigator met with two peers to discuss findings, emerging themes, and interpretations of data. Member checks occurred when the transcripts were sent to participations for validation. Transferability arose from detailed descriptions of the interviews and weekly web assignments as well as purposive sampling, the use of participants enrolled in the student teaching course. An audit trail was kept to account for raw data such as transcripts, coded note cards, audiotapes, weekly assignments, relevant documents, and interview protocols. Finally, because confirmability represents an outgrowth of the inquiry versus personal judgments and biases, the lead investigator relied on the audit trail and judgments of outside sources.

Results

See Appendix C for Thematic Analysis Results

This section presents a compilation of the results from each interview followed by the written assignments. For the interview data, each question was analyzed separately

and assigned one of Van Manen's three levels of reflectivity. For the written data, each weekly response was given an overall Van Manen value. If a sentence or group of sentences within the response proved to be of a different value than the overall, it was noted. Since the participants were not compared to each other, data for each one will be presented separately. At the end of each participant's results, a table displays Van Manen's levels of reflectivity.

Sam – Interview Analysis

For the first interview (see Table 4), Sam's lesson used a station format to introduce the students to a variety of physical activities such as clearing hurdles and using a medicine ball to physically train. *Question one*, Sam provided primarily level one responses. He appeared to only be concerned that the students weren't bored with the lesson and measured the lesson's success with the level of participation of the students, "they were on task, doing what they were told." *Question two* prompted another level one response. Although he fully utilized the gym and made sure to move around to monitor the students, he realized that there were problems with the equipment such as some of the watches not working. Perhaps the use of pictures on the wall to show proper sit up and push up form might have enhanced his lesson as well.

Question three earned a level two response. He realized that by adding variety to his classes rather than focusing on popular team sports, he was exposing the students to something they may have not had the opportunity to otherwise experience. Level one was found in *Question four*. Sam discussed the set up of the day's lesson and suggested using different sport skills as the only way to really change up the lesson, "so the only way I could change this lesson is try to implement it into our everyday activities…you

could do free throws one station, passing the next station." For *question five*, Sam provided a level two answer. He thought about the predispositions the students may have had and how, as a teacher, he could address those. By giving the students a variety of activities, it not only keeps their interest but "gives them different ways to become healthier too."

For the second interview, Sam had his students prepare individual weight routines and place these on index cards to carry with them. Sam provided examples of level one reflectivity for all questions. In the *first question*, Sam felt his lesson was successful because he wanted each student to develop a workout they could perform whether in the school's weight room or at home and "I think they came up with some pretty good workouts." For the *second question*, all Sam would change would be when the lesson was presented in the unit. "I would move this lesson to the front of this unit…so they could revert back to the note card and not have to ask me any questions." As for *Question Three,* Sam felt the essential strength of the lesson was the fact that the workout schedules the students developed "gives the kids an opportunity to workout at home or at a rec center." The only way Sam felt he could modify the lesson for *Question Four* would have been to take a one-on-one approach with the students. "Maybe taking each individual student, one at a time might help me understand what level they're on…and what they need to work on." *Question Five*, or whether or not the content was important, provided the last example of level one reflectivity. Sam noted that now the students knew which muscles were used as well as have a work out they can take home.

Table 4. Sam's Interview Results with Assigned Van Manen Levels

Interview	Question 1	Question 2	Question 3	Question 4	Question 5
1	TR	TR	PA	TR	PA
2	TR	TR	TR	TR	TR

Note. TR = Technical Rationality; PA = Practical Action

Sam – Weekly Written Assignments

For the first assignment (see Table 5), Sam provided indications of a level one in his response (TR). His main concern was whether or not a particular student was following the rules and participating in the day's activities. He was not concerned with why she was off-task or what he could do to prevent the behavior. Sam almost achieved level two when he stated, "the student probably noticed how unorganized the class was and got the impression she could act that way." He remained at level one when his solution to the problem was to have the student "do a lot of little chores for me" in order to keep her busy.

In the second assignment, Sam provided evidence of level two reflectivity with one level three statement as well. Sam was very concerned with analyzing his and the students' behaviors to see if and how lesson goals were being met and used a variety of techniques to do so. He used an introduction to let the students know the focus of the day's lesson as well as the steps to performing the different skills. Another technique was to use feedback to let the students know "if they are doing the skill correctly or they want to be encouraged and rewarded for doing it right." As for the level three statement, Sam realized that by using questioning as a form of indirect feedback, he was making the material relevant without personal bias. "This strategy helps the students learn how to

solve problems…which many of the students are not very accustomed to doing." Sam tried to end each class with a closure, which was a good time for him to "review the skill we went over that day." Doing so allowed him another chance to see if and how the goals of the lesson were met.

For his third assignment, Sam responded primarily in level one terms. When planning his weekly lessons, Sam was more concerned with the technical application of knowledge, such as what subject will be taught and how many grades need to be taken that week rather than if and how goals are met (level two) or the worth of the knowledge presented (level three). By only focusing on meeting curriculum goals, he is ignoring the predispositions of the students and whether or not they will find the material relevant.

For the fourth assignment, Sam's response generated level two statements as well as one level three statement. He was concerned about clarifying assumptions and predispositions such as "why they are learning what we teach in class" but did not go much deeper than that. He demonstrated critical reflection when he realized that he could improve on this aspect, "I realize that I may not have stressed some of the issues on why it is important to be active." It is becoming important for Sam that his students understand the relevance of the lesson and are able to internalize the importance of being physically active.

For his final assignment, Sam's response provided evidence of level two reflectivity. It was a challenge for Sam to modify his lessons to meet the needs of all of his students, "I had to keep in mind their limitation on what they could and couldn't do." Being able to modify made his lessons run more smoothly and in his opinion, lead to the biggest positive change, his confidence level, "I became more comfortable in front of

people." However, he realized that he still needed to work on his discipline, "I am still young and want to be known as the cool teacher." As a final note, Sam stated that with experience, "I will have more discipline and be harder on the students and not allow them to get away with things."

Table 5. Sam's Written Results with Assigned Van Manen Levels

One	Two	Three	Four	Five
TR	PA	TR	PA	PA

Note. TR = Technical Rationality; PA = Practical Action

Rita – Interview Analysis

For the first interview (see Table 6), Rita presented a lesson on running form in a command style format. *Question one* prompted a level one response based on the students' ability to follow directions. "I would comment on their stance, that they needed to correct that and I would actually see them correct it." She also measured success by whether or not the students could answer questions at the end of the lesson such as why form was important and what were the four components. The students were not required to think or apply concepts. *Question two* provoked a level two response. Rita analyzed student behaviors to see if and how goals were met and she felt that by rewarding students for running, it would keep them motivated. *Question three* provided another level two response. By having the students physically and mentally active for over half of the time period, her goals as a teacher were being met. "They're physically active and

mentally active really throughout the entire lesson," as well as meeting many of the educational objectives and the TEKS.

As for *question four,* Rita gave a level one response. As for teaching the lesson another way, Rita would have either changed the pace of the run or the length of the lap. As a final thought, "I could have had them get with a partner and critique the other person's form." For the final question, *question five,* Rita had primarily a level three response. Her concern of the worth of the knowledge and the social circumstances useful to students was evident. While she realized that the students might "have this dogma of that running is not fun," as teachers, they try to make it fun and provide rewards after completion of the task.

For the second interview, Rita presented a lesson on nutrition and demonstrated level one reflectivity in all of her responses. Rita failed to analyze her or her students' behavior [level two] or to become concerned with the worth of knowledge useful to students. For *Question One*, the success of her lesson was based on the fact that the students were paying attention and doing what she asked. As for changing the lesson, *Question Two*, Rita wished there was a way to maintain discipline and to keep them quiet. As for *Question Three*, the essential strengths of the lesson, Rita felt the students could relate to the lesson on nutrition "because they eat." She also felt the task sheet at the end of the lesson was a strength because the students had to fill out what they ate for breakfast, lunch, dinner, and snack and then "put a smiley face or frown face by it….it got them involved." For *Question Four*, Rita would have like to have had more "interactive visuals" for the students to get them more involved as well as more group work. However, she noted that in two of her classes, the large number of students would

prohibit group work "they're loud as it is just sitting in their desks." As for *Question Five*, why the content was important for students, Rita responded, "I think they do realize that it really is because they're eating." She noted that because of the nutrition unit, some may temporarily change their eating habits but for the majority, "no."

Table 6. Rita's Interview Results with Assigned Van Manen Levels

Interview	Question 1	Question 2	Question 3	Question 4	Question 5
1	TR	PA	PA	TR	CR
2	TR	TR	TR	TR	TR

Note. TR = Technical Rationality; PA = Practical Action; CR = Critical Reflection

Rita – Weekly Written Assignments

Rita's responses to assignment one were primarily at level two (see Table 7). She was very concerned with clarifying predispositions while assessing the educational consequences of a teaching action. For example, one student chose not to participate in the activity. After speaking one-on-one with the student, Rita was able to persuade the student to join in the activity. She noted that the set up of the activity did not promote much student participation in the outfield and realized that changes should be made to enhance the experience for all of the students. For her second assignment, Rita provided indicators of level three reflectivity. When stating which teaching skills she used on a regular basis, she explained why she felt their use made her a more effective teacher. As for establishing set at the beginning of a lesson, "I have found that if the students are drawn in from the start, they are more likely to participate and learn during the actual lesson and activity." She also utilized the skill of questioning several times throughout

her lesson to keep the students thinking and to help internalize the information. While she admitted that some of the teaching skills are not yet a natural part of her teaching style, she realized that their utilization would help her become a more effective teacher, "Even though I may have trouble with some, I know they [skills of teaching] are all extremely important…I am willing to work hard…so I can be as effective as possible."

When asked to describe thought processes while planning lessons in the third assignment, Rita exhibited level one reflectivity. She focused more on the technical application of educational knowledge and basic curriculum principles. Her cooperating teacher provided a list of skills she wanted Rita to teach and Rita used that list to come up with a variety of activities to meet each skill. While keeping lesson objectives in mind, progressive skill sequences are developed as well as the most effective way of presenting the material. In the fourth assignment, Rita displayed critical reflection (level three) when asked how she made material relevant to her students. She was able to describe how she used a specific sport, basketball, and made it relevant to elementary and intermediate students. At the elementary level, "I was constantly explaining to the students why we were doing something." Rita used this format to introduce and reinforce skills as well as reinforce the notion that the students could continue to participate as they aged. At the intermediate level, a variety of basketball games, such as "Knock Out, Horse, and Around the World" were taught to the students. They were told that these games were "something that they can do now and continue doing in the future." As a final note, Rita stated that she planned on making information relevant to the students by giving them many opportunities to practice and hoped to make the material part of their lifelong pursuit of health and fitness. For her final assignment, Rita demonstrated level

two reflectivity. Although she listed many areas of improvement, such as increased ease, increased confidence and effectiveness in discipline, she failed to provide critical reflection in how these areas improved. Instead, she analyzed how these changes affected her behaviors to see if and how teaching goals were met. As a final thought, Rita stated, "I know that I do not know everything about teaching, but I do know that I have had a very solid foundation laid."

Table 7. Rita's Written Results with Assigned Van Manen Levels

One	Two	Three	Four	Five
TR	CR	TR	CR	PA

Note. TR = Technical Rationality; PA = Practical Action; CR = Critical Reflection

Emily – Interview Analysis

For the first interview (see Table 8), Emily used a station format to review fitness components such as agility and speed. *Question one* prompted a level one response. Emily was primarily concerned that the students were on task and doing what was asked of them, for example, that the students went through all the stations and able to answer questions. *Question two* provided a combination of level one and two. While Emily was again concerned with the students being on task and paying attention, "They just don't quiet down, they don't listen…I could have changed that and made sure I had all their attention," she also realized that they may not have understood because some of the material was complicated. *Question three* revealed another combination but this time from levels two and three. Emily was able to look at her actions and the prior knowledge

of her students to plan a lesson that would be effective for all. Emily stated, "I knew the things I was going to teach them…they understood that. And they understood which stations were working on those…I think I did a good job getting that point across…They were able to answer questions I asked them." *Question four* was not asked.

Question five provoked a response that was level three. Emily realized the knowledge that the students were entering the class with as well as areas that were new to the students, "They've never actually been taught things, never been asked questions." The students were also realizing the importance of physical activity and why it might benefit them in the future. She summarized by stating, "I just think the biggest thing about it, it relates to them, it's so important for them for the here and the now is for them to see this, to learn this now and be able to use this in their life, in the future. And I hope that they do."

For the second interview, Emily's lesson focused on drugs. She had previously gathered information for the students. They're assignment was to take the material and present it to their peers. For *Question One,* Emily provided a level one response. Her measure of lesson success was the fact that the students were completing the task, asking questions, and presenting the material as asked. *Question Two* prompted a level two response. She realized that when she did all the research, she limited the educational value of the experience for the students, "I just think they would have gotten a lot more out of it if they had to do the research…they would have learned more."

Emily's response to *Question Three* was also level two. She demonstrated her concern over how student behaviors met the goals of the lesson. Even though Emily planned the lesson, the students were allowed to take "control" of the material

presentation. "They got to use their creativity…and put it together in a way that they wanted to teach the class." *Question Four*. Unfortunately, question four was not asked. *Question Five* prompted another level two response from Emily. She discussed predispositions students may have had, "a lot of them just hear the good things…they don't know what happens if they get caught." She felt that her lesson addressed many components of drug abuse and drug laws that the students may not be familiar with and found that "they usually really get involved in and learn a lot from it."

Table 8. Emily's Interview Results with Assigned Van Manen Levels

Interview	Question 1	Question 2	Question 3	Question 4	Question 5
1	TR	TR & PA	PA & CR	-	CR
2	TR	PA	PA	-	PA

Note. TR = Technical Rationality; PA = Practical Action; CR = Critical Reflection

Note. Question 4 was not asked in either interview

Emily – Weekly Written Assignments

For the first assignment (see Table 9), Emily exhibited predominantly level two responses. She described a situation in which two young men were involved in a physical shoving match that had the potential to escalate into something more. Emily separated the men and had them sit against the wall to wait for her. Once the rest of the class resumed their activities, Emily approached the young men to get their sides of the story and to rectify the situation. She was not so much concerned about whether or not the students were on-task but what she could do to get them back into the activity. Thus

she displayed an ability to meet the goals of the lesson by understanding the needs of her students.

For the second assignment, Emily again demonstrated a level two response. She used a variety of teaching skills to clarify assumptions and to assess her teaching actions because "they [skills of teaching] are skills used to create a positive and effective learning environment, as well as to establish a well-managed classroom." By using teaching skills such as establishing set, teacher silence, feedback, and pre-cueing, Emily was able to analyze if and how her daily goals were met.

When asked to describe her thought processes when developing lesson plans, the third assignment, Emily provided a level two response. Her first step was to make an outline of what she wanted to teach, keeping in mind the predispositions and current levels of her students. As for her teaching behaviors, she wanted to make the activities "fun and different everyday," and her goal was to "finalize objectives, determine which Texas Essential Knowledge and Skills (TEKS) would be met as well as which of the American Association of Health, Physical Education, Recreation and Dance (AAHPERD) outcomes." Overall, she appeared concerned with making sure that her behaviors and that of the students would meet her weekly goals.

In assignment four, when asked how she made the material relevant to her students, Emily answered "why" rather than "how;" a response indicative of level two. She stated, "I realized that the things the students would remember most were things they were also learning about in other classes." Despite the revelation, Emily failed to state how she made the material relevant.

Emily's answer to the fifth assignment provided an indication of critical reflection. She noted that she was able to improve in three different areas throughout her student teaching semester: discipline, planning, and improvising. With discipline, "it is important that your students view you as a disciplinarian first and then they can begin to see you as a friend." With planning, she learned "you can never plan too much for one class period." Lastly, she learned to prepare for bad weather days and missing class days due to outside factors such as unscheduled programs. She summed up her ability to be flexible, "I have learned to prepare…and be willing to work with several different elements." Emily also found that for her, the most surprising aspect of teaching was the lack of motivation from several students. After many failed an exam and seemed not to be upset, she stated, "The attitude was very shocking for me…I want to learn what will motivate them to succeed in the classroom."

Table 9. Emily's Written Results with Assigned Van Manen Levels

One	Two	Three	Four	Five
PA	PA	PA	PA	CR

Note. TR = Technical Rationality; PA = Practical Action; CR = Critical Reflection

Lisa – Interview Analysis

For the first interview (see Table 10), Lisa used a station format to teach a lesson on the five fitness components. *Question one* prompted primarily a level one response. Lisa was primarily concerned that the students were active and "all participating in

something." She was surprised "they were able to recall all the components of fitness and identify which activities went with them after we just talked about it for 5 minutes." *Question two* was a brief level one response. Lisa was only concerned with the technical application of knowledge and how that application affected her lesson. She commented on the lack of flow of the lesson and realized, "I think I forgot my components on the chest pass poster."

Question three once again reflected Lisa's concern with the technical application of knowledge (level one). She was "happy about the students realizing to use them [the station cards] as a reference" and "everybody was on task for probably 35-40 minutes of the class period." *Question four* progressed to a level two response. Lisa became concerned with the student's ability to apply the prior knowledge they obtained with future cognitive endeavors, "they could figure out what exercises went with what and even create themselves a workout…letting them use what they know and apply it to an activity."

The final question, *question five*, provoked another level two response. Lisa realized the educational consequences of teaching fitness components. However, the level of that knowledge varied, "they don't need to know the technical terms of it but they need to know what's involved in fitness so they can identify activities that are beneficial to them." When asked to clarify, she stated, "I'm not as concerned that they say "muscular endurance" as "we work our muscles for an extended period of time."

For the second interview, Lisa's class was nearing the end of a tennis unit. The students were engaged in game play. *Question One* provided the basis for a level one response. Lisa felt her lesson was successful because "they were all playing and

interacting." She did not worry about clarifying any assumptions or the worth of the knowledge given to the students. Her only concern seemed to be the fact that "they really picked up the skills and could stand there and hit that ball."

Lisa provided a level two response when asked *Question Two.* She went beyond the technical application of knowledge and addressed assumptions that she had made. "I thought we all had an understanding…but I should have modeled how a game should go." After seeing confusion from many of her students, Lisa realized "I went over it too fast" and she should have revisited the material. When asked the essential strengths of the lesson in *Question Three*, Lisa gave a level one response. Her criterion for a successful lesson's strength was the fact that "all the students were active a lot." She also stated that the lesson "made them think about when to use the shots," but she failed to explain how she came to that conclusion or how she measured this cognitive ability. *Question Four* provided another level one response. The only suggestion Lisa had for modifying the lesson would be to present a tennis match on television and "maybe identify the shots…and then we try to model what the tennis pros do." Level one reflectivity emerged from *Question Five*. Lisa appeared to be more concerned that the students were active and happy rather than learning or improving skills. "I think they had a lot of fun." She felt this was more crucial than "if they were actually learning the specific skills in tennis."

Table 10. Lisa's Interview Results with Assigned Van Manen Levels

Interview	Question 1	Question 2	Question 3	Question 4	Question 5
1	TR	TR	TR	PA	PA
2	TR	PA	TR	TR	TR

Note. TR = Technical Rationality; PA = Practical Action

Lisa – Weekly Written Assignments

Assignment One - Lisa primarily recorded a level one response (technical rationality) when answering assignment one (see Table 11). She was mainly concerned with the technical application of knowledge and was not concerned with any deeper reflective levels. Following the examples set forth by her cooperating teachers, Lisa plans to take the approach that "students should never have time to misbehave" and she will have a "specified routine for the students to follow as they enter the class." She plans to take "full advantage" of routines and procedures to help the class "run smoothly."

Assignment Two – At first glance, it appeared that Lisa was providing level two responses for her second assignment. After further scrutiny, it was determined that she was actually at level three, critical reflection. Not only did Lisa examine both her and the students' actions to see how and if goals were being met, she went further by critically analyzing herself. She did this by examining each of the teaching techniques she utilized. She also examined how she could use them to become a more effective teacher and how she could "make it [the material] more meaningful to the students." Her final statement reinforced her critical reflectivity, "Although I need to work on several of them [teaching

skills], they always aid me to allow me to teach effective lessons and increase student learning."

Assignment Three – In describing the thought processes used when developing lesson plans, Lisa provided evidence of a level three response (CR). While planning, Lisa asked herself many critical questions concerned with the worth of knowledge and how the material can best be related to the students. She begins planning a week in advance because it gives her time "to think of potential problems" and how she can avoid them. She also asks herself questions such as "What am I trying to accomplish? Is this interesting? Do I understand the point of the lesson?" Once she "answers all questions positively" she moves on to other aspects of the lesson plan such as set, activity, closure and pre-cue. For Lisa, "the lesson plans help me to be organized…and planning a lesson well before time is a great aid to present an effective lesson."

Assignment Four – For her fourth assignment, Lisa provided indicators of level three reflectivity. She provided several examples of how she made the material relevant to the students as well as how the students could use this information in the future. As an instructor, Lisa made sure to state the relevance of the lesson at the beginning of each class period. She also tried to make sure that she points out to all of the students how the material can be used in the "real world" as well as other subject areas by having the students "perform activities that aid in the application of the information to real life."

Assignment Five – When asked what areas she made the most progress or had seen the biggest changes, Lisa provided a predominantly level three response. Throughout the semester, Lisa was forced to think of different ways she may have approached lessons to improve the learning process. By learning how to "break the

lessons down to provide success for every student" and by "providing variety in my lessons," she felt she will continue to improve as a teacher. Her biggest challenge was discipline and she found that "I need to work on not disciplining the students because they have made me angry or done something to me."

Table 11. Lisa's Written Results with Assigned Van Manen Levels

One	Two	Three	Four	Five
TR	CR	CR	CR	CR

Note. TR = Technical Rationality; CR = Critical Reflection

Sally – Interview Analysis

For the first interview (see Table 12), Sally did a circuit workout in the weight room. For *question one,* Sally gave a level three response. She was concerned with the worth of knowledge gained by the students and she measured this from the student's actual comments. "I think that is the best way…to know if the lesson's successful is the feedback from the students." One of the students came to the realization that the workout he was exposed to in the day's lesson was one he could take with him after high school. As for *question two,* Sally provided a strong level two response. She was very concerned with clarifying her directions so the students could get more out of the lesson because they seemed to be "confused on the circuit workout." To prevent this from occurring again, Sally would "just provide [sic] more information, more detail."

Question three provoked another level two response. Sally understood that many students might just now realize how important safety and technique are in a weight room.

To illustrate safety, Sally said, "I think they realize how important spotting is to somebody when you can't get weight off of them. I think that was an important feat for us." As for technique, she stated that the students realized, "it can make a tremendous difference on the strain you place on your body" and "I think they realized to actually correct because they felt the difference." *Question four* prompted a level one response. Sally felt that the main changes she could have made to her lesson dealt with more of a technical application than anything else. From reducing the number of stations, increasing the number of repetitions, and making the groups of students smaller, Sally believed that the students might have gotten more out of the lesson. As for *question five,* Sally delivered a level three response. She was very concerned with the worth of the knowledge presented and whether or not it was useful to the students, "it's really hard to motivate students to do things in class much less take it home or take it beyond physical education class." However she realized that even though it may mean more preparatory work on the teacher's behalf, it results in lessons that are, "more adventurous, more challenging…not the same old-same old and I think that's most important."

For the second interview, Sally had the students work on the slap shot, a component of floor hockey. *Question One* demonstrated level one reflectivity by Sally. She was very concerned that they students were on-task, "They actually tried to do the components that I asked…they went through the drills." Sally demonstrated level one reflectivity with *Question Two* as well. When asked what she would change about the lesson, Sally felt she would defensive drills for the students to do and admitted that the floor hockey unit "could be a little bit more challenging." *Question Three* presented another level one response. As for strengths of the lesson, Sally felt that both the task

sheets and the amount of activity time were important. She explained that the activity time was maximized and the students were able to have much repetition with the drills. As for the task sheets, "it's giving you two different outlets to actually attain one goal." [The partner and the actual work sheet]

Level two reflectivity was demonstrated in *Question Four*. Sally realized that with this particular group of students, drills, individual and peer work was most efficient. "It is a group that always wants to stay active." She also noted that if she had them perform one-by-one, the students tended to "get kind of antsy and they get off-task," therefore, small group activities were more productive than large group. *Question Five* prompted another level two response. Sally felt that the content covered in the day's lesson was relevant because "they were able to see why the wide grip worked…why all the methods worked, they could see why." Not only were the students performing the slap shot, they were asked to analyze their own and their partner's performance and then make corrections and/or modifications. Sally added that the students were aware the material they learned in this day's lesson would be tied into the next lesson.

Table 12. Sally's Interview Results with Assigned Van Manen Levels

Interview	Question 1	Question 2	Question 3	Question 4	Question 5
1	CR	PA	PA	TR	CR
2	TR	TR	TR	PA	PA

Note. TR = Technical Rationality; PA = Practical Action; CR = Critical Reflection

Sally – Weekly Written Assignments

For assignment one (see Table 13), Sally displayed evidence of level three reflectivity. She was very concerned that she keep an open mind when dealing with her students and by keeping their social circumstances in mind, Sally was able to better manage her teaching time as well as make sure that her material is relevant to all students in her charge.

> Realizing and considering the home life of many of these students has me reconsidering some of my management plans and decisions. Being sensitive to the students and understanding why they think as they do will help me build a strong foundation…

Practical action (level two) was the primary level from Sally for her second assignment. She often used the teaching techniques of repetition and redundancy, teacher silence, and questioning to reinforce the main points of the day. Had she pursued this line of thought further, level three reflectivity may have been achieved.

For the third assignment, Sally provided level one responses. Sally focused on the technical application of knowledge such as worksheets, activities, and class notes as well as basic curriculum principles that included how many days she will spend on each subject. Prior student subject knowledge and worth of knowledge did not appear to be considered while planning.

Sally provided evidence of level three reflectivity in her fourth assignment. She began her response with the statement "it is quite ironic that physical education and health are considered the least important in the academia setting, but actually they have a greater and more extensive impact on the students than that of any other subjects." She

then proceeded to describe how in each of her teaching fields she tries to make material relevant to her students. In physical education, she tried to use fun and enjoyable games to reach every student, "I try to include everyone and their skills. I include the beginner to the advanced." In health, she used "appropriate experiences and education" to keep her students "stimulated and interested." As a final note, Sally added, "I have to motivate, encourage, and reinforce the ideas surrounding this dominion daily."

When asked what areas she had made the most progress or had seen the biggest changes, Sally's response provided indications of level three thinking in her last assignment. Her area of biggest progress had been in the area of class management. She critically reflected that, "I have set boundaries, yet left openings and opportunities for the students to have an effective lesson and still be stimulated and interested each day." She was also able to look at the social circumstances the students brought to the learning arena, "I need to take each day as another chance to open minds up to physical activity." As a final statement, Sally noted that she learned many concepts during her student teaching experience and perhaps the most relevant is "there seems to be a solution to every problem."

Table 13. Sally's Written Results with Assigned Van Manen Levels

One	Two	Three	Four	Five
CR	PA	TR	CR	CR

Note. TR = Technical Rationality; PA = Practical Action; CR = Critical Reflectivity

Discussion

The purposes of this study were two-fold. First, we wished to apply Van Manen's model to specific strategies such as written assignments and interviews to examine levels of reflectivity and changes in these reflectivity levels throughout a student teaching period. Second, we sought to assess if Van Manen's model might be applicable to a preservice physical education setting.

Across the 12-week student teaching period, each reflectivity level of Van Manen's model was noted at some point as were changes in levels of reflectivity. Observed changes were in a positive direction with none of the participants demonstrating a *decrease* in reflectivity. In general, these increases are in line with Van Manen's notion that reflectivity is sequential. This progression could be seen in the written assignments where all students recorded higher levels of reflectivity as the semester developed.

In this study, the written assignments moved from technical foci (such as discipline) to a more reflective focus (such as how to make material relevant to students). Such progression may have led to the positive changes in reflectivity levels observed throughout the student teaching period. Pultorak (1993) reported a similar trend and noted that teachers should consider the desired level of reflectivity and then design activities to match. For example, Lisa displayed level one, technical rationality, in her first assignment, but had progressed to level three, critical reflection, by her final assignment. In her first written assignment, Lisa provided evidence of technical rationality when she stated that both of her cooperating teachers used management strategies, such as teacher silence or reward systems, to enhance the learning

environment. In contrast, in her final assignment, Lisa demonstrated critical reflection when she realized that she could not discipline a student "when they have made *me* angry or done something to *me*." She also realized that she could not simply present the material and expect the students to learn it; she needed to constantly revisit the information and provide connections to new information.

While all of the participants demonstrated higher levels of reflectivity across the written assignments, only two displayed critical reflection (i.e., level three) during the first interview and none during the second. Similar findings were reported by Hatton and Smith (1995) who concluded that written and oral reflections may not reveal the true thoughts of the preservice teacher because of feelings of vulnerability and/or the need for self protection. It is difficult to determine if the differences in reflectivity levels noted between the oral and written data were due to the activity itself or if the student teachers felt more comfortable with the anonymity of writing versus the face-to-face contact of the interviews.

Time constraints may have been another reason for the absence of higher levels of reflectivity during interviews. Pultorak (1993), Zeichner and Liston (1987), and Hatton and Smith (1995) found that reflection may be affected by lack of time. All found that when students were given 'adequate' time to answer ('adequate' time was unique to each person), the students demonstrated higher levels of reflectivity. Since many of the participants in our study had to resume teaching duties immediately after the debriefing session, their focus may have been on answering the questions as quickly as possible in order to prepare for the next class.

While Ross (1989) also found that her students demonstrated high reflectivity levels at least part of the time she suggests that the supervisor could be at fault for not fostering higher levels of reflectivity due to lack of communication or inadequate directions. The lower levels of reflectivity found in both interviews may be a function of the structured interview format. Since probing questions rarely prompted the student teacher to elaborate or provide additional examples, the participants may have felt their responses were adequate.

Other potential limitations for the lack of reflectivity may have been due to the participants desire to 'please' the interviewer or the interviewer's questioning techniques (for further details on limitations related to structured interviews, see Fontana and Frey, 2000). In contrast, the written assignments were very specific regarding which question the students were to answer and instructions to provide specific examples. The participants might have provided more reflective answers had the interviewers prompted the participants to expand or provide additional examples.

Gore (1990) studied three groups of students and found that the ability to reflect may be due to the nature of the students themselves. One group, for example resisted reflection (recalcitrant), a second group adopted behaviors in order to achieve good grades (acquiescence), while the third focused on the process of learning and reflection (committed). It is difficult to distinguish, however, if the student teachers in our study were committed to learning or were being acquiescent because they desired a good grade, since these motivation variables were not examined. Overall, Gore (1990) found that age and experience had no relation to reflectivity levels.

Though the present study, we did not examine whether or not age or experience impacted reflectivity, the student's grade point average (GPA) might represent another variable for consideration. For example, Sam had the lowest GPA and demonstrated Van Manen's levels one and two on a consistent basis. Critical reflection was never displayed in either interview or written work. Sally, on the other hand, had the next lowest GPA yet consistently demonstrated the highest levels of reflectivity, a possible indicator that she was committed to reflectivity rather than to receiving a good grade. Meanwhile, Rita, who had the highest GPA, consistently demonstrated all three levels throughout the semester. She scored particularly high on her written assignments. From the obtained data, like Gore, we could not accurately determine if student GPA might impact levels of reflectivity (i.e., the higher the GPA, the higher levels of reflectivity).

The changes in reflection observed in this study may also be a function of the student teachers becoming more acclimated to their environment. At the beginning of the semester, the student teachers were more concerned with off-task behavior rather than if the students were learning or not. By semester's end, the student teachers were focused more on trying to get to know their students in order to make the material relevant. These shifts in focus can be explained, in part, by Fuller's (1969) Concerns Theory. Fuller's developmental theory comprises three hierarchal stages of concerns: self, task, and impact. At the self stage, concerns about one's own survival and adequacy in the learning environment dominate. The student teacher asks himself how he is doing, will he succeed, and how others think he is doing. Once these concerns are alleviated, he can move to the next stage. The task stage is the mastery stage of teaching. Here one deals more with concerns about daily tasks such as grading papers, attending meetings, finding

educational resources and other activities. Once these are alleviated, the student teacher can move to the final stage, impact. Here the focus shifts to learning and concerns for themselves is replaced with concerns for the students. Are the students learning, is the material relevant, and how can achievement levels be raised are questions an individual at the impact stage might ask.

Fuller's theory mirrors the levels of reflectivity found in Van Manen's model quite appropriately. Van Manen's level one, for example, is similar to Fuller's self stage. That is, at that level/stage one is concerned that the students are doing what is asked and little more. Rita, for example, described a discipline situation in her first assignment where the student did what she asked (technical rationality) and she felt she had the situation under control (Fuller's self stage). "I gave him one warning and he responded…I felt like I had the situation under control and that the boy was going to participate."

At Fuller's task stage and Van Manen's practical action stage (level two) needs are being addressed and educational consequences are being considered – are goals being met? becomes the focal issue. In the second written assignment, Sam addressed the issue of how he met predetermined educational goals (practical action) by utilizing numerous teaching skills when developing his lesson plans (i.e., Fuller's task stage). Sam noted that he tried to use indirect feedback whenever possible because it "helps the students learn how to solve problems that are related to body mechanics."

Fuller's final stage, impact, corresponds to Van Manen's critical reflection level (CR). In both models teachers ask whether the material is relevant and how might achievement levels be increased. In her final assignment, Lisa noted that for a student to

achieve success she must break down the lesson into steps and get the student involved, "I cannot simple present information and expect the students to learn it."

In sum, the first purpose of this study was to apply Van Manen's model to strategies such as written assignments and interviews to examine levels of reflectivity and determine if there were any changes in these reflectivity levels throughout a student teaching period. We detected all three levels of reflectivity in our sample and noticed changes throughout the study's time period. As for the second purpose of this study, we sought to assess if Van Manen's model might be applicable to a preservice physical education setting. While the model has been applied to other educational settings and proven to be a valid assessment tool (i.e., Pultorak, 1993; Wedman and Martin, 1986), this study provided support of the applicability of Van Manen's model to a physical education setting.

Van Manen's three level model provides a format that served as a viable tool to guide and assess reflectivity levels of preservice physical educators. Because of the important role of teacher reflectivity in today's educational environment, teacher education programs *must provide opportunities to develop reflectivity* (Davis, 2006; Lee, 2005). This is equally true in physical education where the National Association for Sport and Physical Education (NASPE), Standard Eight states that physical education teachers "are reflective practitioners who evaluate the effects of their actions on others…and seek opportunities to grow professionally" (2001, p. 8). Nevertheless, few documented efforts have focused on promoting and/or assessing reflectivity levels among Physical Education teaching programs (Tsangaridou & O'Sullivan, 1994; Placek & Smyth, 1995)

This study is an attempt to fill this 'assessment void.' Tsangaridou (2005) noted that prior studies indicated how difficult it was to teach preservice teachers to become more reflective. Our study is unique because it combines available resources (i.e., supervisors, technology), with Van Manen's model to assess reflectivity levels in a physical education setting. By adding reflective components to techniques already utilized in a student teaching experience, NASPE guidelines for reflective practitioners may be accomplished.

This study found that Van Manen's levels could be used to obtain objective assessments of both written and interview protocols. Of particular note was that as the written assignments increased in complexity, responses also tended to increase in reflectivity. By first focusing on technical components (i.e., discipline, teaching skills) and then moving to more complex components (i.e., personal changes, material relevance, socioeconomic impact of community), preservice teachers may be prompted and encouraged to increase their reflectivity. This strategy of building on components may satisfy Richardson and Placier's (2001) challenge of developing ways to determine levels of reflectivity and ways to assess whether changes occur as the result of a particular intervention.

Additionally, Van Manen's model can be used to apply a quantitative measure (i.e., level one, two, or three) to qualitative responses (i.e., interviews and written assignments) to assess reflectivity levels of teachers. It is important to note, however, that in order for Van Manen's model to be utilized in the preservice physical education setting, the supervisor will require training. The supervisor needs to be trained to know the three levels and be able to recognize/evaluate the student's responses. These

expectations are predicated on the assumption that the preservice program has infused reflectivity into its field-based experiences. The expectation for reflectivity during the student teaching experience then represents a continuation of these expectations and are not suddenly introduced during their culminating internship.

Despite its contributions in applying a teacher reflectivity model to a student teacher setting, there are some important limitations to note in the present study. Sample size, for example, has to be acknowledged: by only examining five preservice teachers, it is difficult to ascertain if these same changes occur with a larger population of student teachers. Because of the small sample size, no attempt to extrapolate the results beyond the immediate sample will be made. Nevertheless, these results do merit consideration for use in teacher preparation programs as they suggest that as structured activities (i.e., written assignments) increase in 'difficulty,' reflectivity levels may be increased as well.

Additionally, the student teaching time frame may have presented a limitation as well. A twelve week student teaching experience might not represent enough of a time frame to study cognitive changes. Observation of student teachers over a longer period might yield further information on the stability of the changes and whether they can be maintained.

Conclusion

In sum, our data suggest that the use of supervisory practices (debriefing interviews), weekly written assignments, and using the Internet as a vehicle for communication between student teachers and supervisors can bring about shifts in student teacher reflectivity. Using Van Manen's model to develop such strategies may

prompt preservice teachers to cultivate reflective questions and answers about their teaching with may be a positive step in becoming a more reflective practitioner.

Based on lessons learned from this inquiry, future studies might further examine the use of semi-structured debriefing sessions that allow additional prompts and questions to be asked. Perhaps through the use of prompts and asking for more examples in the interview questions, substantive changes in reflectivity may be noted. Since Van Manen's framework has already been utilized in the general education setting as well as with undergraduate physical educators (Wedman and Martin, 1986; Pultorak, 1993; Tsangaridou and O'Sullivan, 1994; Placek and Smyth, 1995), examining preservice teachers represents a logical next step in expanding physical education research.

Future research could also examine the role of subject matter content on reflectivity levels. The subject matter taught may have an impact on the levels of reflectivity. For example, a lesson concerning drug use may provide evidence of higher levels of reflectivity compared to a lesson over the proper form for running. Also, it may be important to determine if student teachers are truly demonstrating level three (critical reflection) when writing responses or if they are motivated for a grade. While lesson context may have an impact on levels of reflectivity, simultaneously examining students' motives for writing specific responses may help determine if the students are actually at the demonstrated level of reflectivity.

Finally, we recommend increasing both the number of participants as well as the time frame of study. For example, Van Manen's model can be used to monitor student's reflectivity as they progress through their teaching practicum and into their induction year. As Ellsworth (2002) noted, reflection is a learned process and specific strategies

should be taught to both preservice and in-service teachers. Examining the participant as both a preservice and inservice teacher may provide evidence of students learning how to be reflective and whether or not they continue to use this knowledge in their induction years. For today's teacher, reflection should become an ingrained activity used not only to become more thoughtful decision makers but also to become more effective teachers.

CHAPTER III

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Methods that help to increase teacher and preservice teacher reflectivity are considered highly beneficial. This study was designed to utilize weekly web assignments and supervisory practices such as debriefing interviews to help assess reflectivity among preservice physical education teachers. The findings of this study may be valuable in several ways.

First, the use of debriefing interviews may serve to help the preservice teacher focus on various aspects of teaching they might otherwise ignore such as why or why not the lesson was successful and how they might improve in future lessons. Although the student teachers demonstrated low levels of reflectivity during the interviews according to Van Manen's model, they were provided a focus to determine whether or not the lesson was successful. By allowing the students to revisit the interview questions later in the day as suggested by Wedman and Martin (1986) and Hoban (2000), the students may be able to focus more clearly on the lesson and provide responses that demonstrate higher levels of reflectivity.

Second, this study found that most of the participants were more comfortable with the written assignments than the interview setting. This may be due to the nature of the assignments, such as a focus on discipline and what they felt they learned while student teaching. Having more time to reflect and to thoughtfully phrase responses may also have contributed to the higher levels of reflectivity found in the written assignments. A

goal of teacher preparation programs might be to address how to structure learning experiences that maximize opportunities for thoughtful reflection.

Additionally, all but one of the participants demonstrated Van Manen's third level of reflection through the written assignments at some point during student teaching. While this finding may be supported by Fuller's (1969) theory that students become less focused on task and more focused on teaching; or by Ross's (1989) findings that some of the preservice teachers were more predisposed to reflectivity; or by Gore's (1990) findings that the students anticipated the responses we were looking for and wrote accordingly, we suggest that this study demonstrates that preservice teachers can increase reflectivity when placed in programs and environments that are designed to foster reflectivity.

Finally, it is recommended that teacher preparation programs utilize Van Manen's model of reflectivity in order to provide students with opportunities to reflect in a manner that allows them to reflect until the process becomes more natural and less forced. It is also suggested that students are provided with a number of mediums to express their reflectivity such as lab experiences, technology, and written as well as oral assignments. As Pultorak (1993) and Loughran (2002) stated, students can increase their reflectivity if they are in programs designed to foster it.

One major limitation of the study that should be recognized is the number of participants. Only a small number of students were enrolled to student teach the semester the study was conducted. Since the primary investigator was also a University supervisor who oversaw many of the student teachers who could not be used. This was to eliminate

any conflict of interest or feelings of coercion on the student's part. Consequently, the number of available students to participate in the study was limited.

In conclusion, it is suggested that further research expand the number of participants in the sample pool and increase the time frame of a study. As technology continues to advance, examining other methods of intervention such as web cameras and home video conferencing may also be beneficial. It is also suggested that practices used to introduce and increase reflectivity begin at the onset of the education program and continually reinforced not only while student teaching but as novice teachers as well. As educators, our goal should be to continually grow and demonstrate thoughtful reflectivity. We cannot expect our students to become autonomous practitioners if we are not as well.

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APPENDIX A

Pultorak's (1993) questions

1. What were essential strengths of the lesson?
2. What, if anything, would you change about the lesson?
3. Do you think the lesson was successful? Why?
4. What conditions were important to the outcome?
5. What, if any, unanticipated learning outcomes resulted from the lesson?
6. Can you think of another way you might have taught this lesson?
7. Can you think of other alternative pedagogical approaches to teaching this lesson that might improve the learning process?
8. Do you think the content covered was important to students? Why?
9. What moral or ethical concerns occurred as a result of the lesson?

APPENDIX B

Weekly Written Assignments
http://stpe.tamu.edu

Week 1 - Describe the teaching and learning environment at the school you have been assigned. What type of environment does your cooperating teacher(s) promote? Provide some of the positive aspects that you have observed your cooperating teacher(s) displaying within the school environment (this is not strictly limited to what you may have observed in his/her classroom).

Week 2 - What proactive steps have you observed your cooperating teacher(s) take or instill in the gym and/or classroom for providing a good class setting? What management skills have you observed your cooperating teacher(s) utilize to control the environment? Provide at least one scenario of how the teacher(s) effectively used management strategies to enhance the learning environment

Week 3 - Describe one discipline situation that occurred during a lesson you were teaching or when you were in charge (lunch duty, bus duty, etc.). What was your initial reaction? How did you resolve the situation? Was there some measure of classroom management that you could have used that might have avoided the situation? Place yourself in the shoes of the student for a moment. What may have caused the student to react the way he/she did?

Week 4 - Describe your thought-processing strategies you went through in developing the upcoming week's lesson plans in your teaching field(s). When did you plan the lessons? Where were you when you wrote out the lesson plans? How much time was spent preparing the lessons? Why did you choose the particular activities that you put into the weekly lesson plans?

Week 5 - Reflect back on the unit and lessons that you have been teaching. Ask yourself if the material you are presenting is relevant to the students. Do they understand the importance of "why" they need to know the material? Can they take the content material and use it in either other content areas or in their daily lives? Explain how you are accomplishing this or how you intend to accomplish this in the near future.

Week 6 - You should have had ample opportunities to utilize some of the skills of teaching. Refer back to several lessons from this past week. Which skills were used on a consistent basis in the lessons? Think back on the feedback that you provided the students. Was the feedback direct or indirect (questioning strategies)? Were the students challenged to think at levels greater than basic rote memory? What are some strategies you can use to accomplish the task of moving the students in your classes to think at higher levels?

Week 7 - Provide a brief description of the socioeconomic structure of the community in which you are teaching. How does this impact the social and learning environment in the school? Give examples of positive and negative aspects that you have noticed in the school that may stem from the community. Critique how the school takes advantage of the positive aspects of the community and how they overcome the negative.

Week 8 - What was your initial reason for going into education? Explain why you chose to be a teacher. What is your current feeling about teaching now that you have eight weeks of teaching experience under your belt? Discuss in detail what you think should be the purpose of education. What should education be providing for your students? How does your primary teaching field fit into this philosophy? What is your vision for education in the next 10 years and where do you see yourself that vision?

Week 9 - Over the past semester you have probably noticed a big change within yourself as a teacher. Discuss the areas in your teaching where you have made the most progress or have seen the biggest change. Which areas do you think still need more improvement? What was the most unexpected challenge you faced during your student teaching? What are some new ideas that you learned from your cooperating teacher(s) or other teachers at your school?

Week 10 - How well do you think the Texas A&M Professional Development Program (PDP) prepared you for student teaching in Health/Physical Education? Your second teaching field? Which courses were the most beneficial that prepared you for student teaching? Please provide suggestions for future directions in our program that will assist future student teachers.

APPENDIX C

1. Do you think the lesson was successful? Why/Why not?

For the first interview, emergent categories were lesson success, student characteristics, and lesson emphasis. As for the first category, all felt their lessons were successful based on the fact that their students were active the entire class period. Student characteristics consists of three subcategories of cognitive actions, student physical behaviors, and student attitudes focusing on student interest. Cognitive actions were characterized by the way students reacted to cognitive stimuli and was measure that the students answered questions throughout the lesson. Student physical behaviors was the students' physical actions. For example, Rita said she would correct some aspect of running form and the student would comply. Student attitudes focusing on student interest dealt with the present and future interest of the students. For example, Sally wanted to provide a lesson that the student could do on their own at home now and after completing high school. Lesson emphasis dealt with the focus of the lesson as well as teaching techniques. Rita would ask the students what the purpose of the lesson was during closure to make sure they learned what she wanted them to learn.

Categories to emerge in the second interview were lesson success, teacher actions and beliefs, and student characteristics. Lesson success was very similar to the first interview. All felt the lesson was successful but few said why; success was based on the fact that students answered questions at the end of the lesson. Teacher actions and beliefs were what the teachers did to help the students learn such as Sam trying to get his point across. Student characteristics was again similar to the first interview, were the students on-task, asking questions, and completing the assignment.

2. What, if anything, would you change about the lesson?

Lesson structure, student behaviors, and changes to lesson emerged in the interview. Lesson structure was how the gym was to be organized, what topic was covered, and which teaching style was used. For example, Emily would have the students do the research themselves. Student behaviors dealt with how the students responded physically and cognitively to teachers demands such as Sally's students were not paying attention. For changes to lesson, almost all had suggestions for change. Sam, for instance, would check all equipment beforehand to make sure all was working correctly.

In the second interview, lesson plan changes, teacher beliefs and actions, and student behaviors emerged. As for changes, Sally would add more drills and Lisa would model the game and define the rules more. For teacher beliefs and actions, Lisa felt that if she had been clearer in her instructions, her students would have known what to do and not been off-task. For the final category of student behaviors, Sam felt that if his students had their workout cards in advance, more time could have been spent working out rather than asking redundant questions.

3. What were the essential strengths of the lesson?

For the first interview, emergent categories were lesson content and structure, student involvement, and teacher behaviors. Lesson content was what was covered that day and how the topic was addressed such as Lisa using station cards to present the information. Student involvement involved physical and cognitive actions from

the students. Rita and Sam commented on the time the students were physically active while the others focused on more of a cognitive aspect such as giving examples and discussing differences between fitness components. Teacher behaviors dealt with preparation and teaching skills such as Sam getting to know his students and "where they were coming from" so he could relate material to the students.

In the second interview, lesson strengths and student behaviors emerged. Lesson strengths pertained to perceived positive lesson outcomes. These ranged in complexity from Sam being glad the students got to work out to Emily giving her students several options on how they could present the learned material. As for student behaviors, this category dealt with how students performed, in class or not. Sam's lesson gave them a workout they could do on their own and Rita covered nutrition so the students could modify habits at school and at home.

4. Can you think of another way you might have taught the lesson?

Only two categories emerged for both interviews. In the first, changes to implement and content emerged. Changes were alternative choices the student teachers might make when teaching this same lesson in the future. For example, Lisa would change the format to divergent and have the students decide what activities went with what. The content category dealt with the subject matter covered in the lesson. It did not particularly relate to the question and was more of a miscellaneous category.

For the second interview, lesson changes and student discipline emerged. Lesson changes were very similar to interview one, such as Rita allowing the students to do more of the activity themselves. Student discipline dealt primarily with off-task behavior. Several noted that whether in the gym or not, if students were not kept busy, they tended to get "antsy" or talk to neighbors and not do what asked.

5. Do you think the content covered was important to students? Why/Why not?

Three categories emerged in the first interview. The first was student cognition. Emily commented that prior instructors had the students enter the gym, perform the activity, and leave without checking for understanding. She changed the presentation and now the students are beginning to realize why actions are important and how it will benefit them in the future. Second to emerge was lesson content. Here is material covered in the lesson. For example, Sam said that instead of focusing on traditional activities such as football and basketball, he presented activities such as hurdles and shuttle run to keep students interested. The last category was lesson relevance, the importance of the lesson. Sally found that by introducing different activities, some students are actually motivated to take what they have learned outside the class room.

In the second interview, lesson importance, teacher beliefs and actions, and student characteristics emerged. Lesson importance was basically the same as lesson relevance. All felt their lesson was important but few said why. Rita felt nutrition was important because "we all eat." Teacher beliefs and actions were their beliefs about the effectiveness of the lesson such as Lisa equating better skills with more motivation to play. Student characteristics were student behavior and actions. Sally's students were able to see how each component of the slap shot worked together for an effective shot and what would happen if they did not use each correctly.

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